Introduction

> So far as it goes, a small thing may give an analogy of great things, and show the tracks of knowledge.
>
> – Lucretius, *De rerum natura*

The sentence above comes from a particularly exquisite moment in *De rerum natura*. Lucretius has just instructed his reader to notice the motions of dust motes the next time a ray of light crosses a dark room. Following the lives of barely visible specks of matter here means tracing their sequence of meetings and partings, their innumerable contacts and endless conflicts, and the unseen factors that compel them now in one direction, now in another. Whenever it occurs, the chance to observe so many "minute particles mingling" in a sunbeam promises access to a secret knowledge – nothing less than a glimpse of that invisible primordium in which elemental bodies collide and combine to produce a world. One thus attends to the dance of the dust mote, according to Lucretius, because understanding the material lives of the smallest things means understanding the composition of all things, including those "tracks of knowledge" that comprise human experience.[1]

This is a book about the consequences of following Lucretius down this road. How exactly does one link the motions of atomic particles to the patterns of thought that govern our apprehension of the world? What kinds of experience would such a connection allow us to envision? What would it disallow? And what sort of poem do we require for making the collisions of particles correspond to the collisions of persons – or for observing the mind's correlation with its own materials? The present study explores responses to such questions found in texts that presume our knowledge about the materials out of which human subjects are composed amounts to knowledge of the human. Or, more precisely, this is a book about writers who develop such an idea to exhilarating ends and about the costs of that idea's limitations. In the chapters that follow, I trace the materialisms

of American poets and theorists of poetry in order to sketch a short history of the atomized human subject – the person conceived as its relation to a field of objects – and I explore the significance such a history might have for the range of critical practices that lay claim to the term "materialist" today. By examining poetic adaptations of Lucretius' assertion that tracking the atom discloses the tracks of thought, this book uncovers an exchange of ideas about the viability and the limitations of radical materialist accounts of things like ethics, agency, and intersubjectivity.

When Lucretius recommends attention to the whimsical activity of dust motes, he presupposes a thesis that the American writers I discuss and a great deal of today's most provocative scholarship adopt as a foundation: namely, that grounding any discussion of what constitutes human experience in its material components opens avenues for new models of that experience. Whether we specify this material ground as a field of atoms or a bundle of neurons, the Lucretian thesis demonstrates that the patterns of organization we think of as persons are in fact aleatory events tied to a physical substrate – irremediably contingent, historical, finite. But these conditions are not always easy to tolerate. Atomized subjects are unusually vulnerable to dissolution; a material ground constantly slides out from beneath our feet. In the atomist poetics envisioned by Walt Whitman, Ralph Waldo Emerson, George Santayana, and Wallace Stevens, the opportunity afforded by the Lucretian insight cannot be dissociated from the obliquities and opacities that come with it. In response to the epistemological lacunae that often trouble materialist ontologies, these writers stage a series of experiments with the conceptual technology of the atom. I am interested in the history of this experimentation – a history laboring to discern the edges of what our shared materiality can tell us about our prospects for new models of our material selves.

This tradition in American poetics presupposes that new conceptions of subjectivity require richer accounts of the relation between the human and the material. Of course, the terms of that relation are notoriously difficult to pin down. As scholars and theorists interested in our material investments have often noted, human experience seems at once wholly dependent on physical reality and never satisfactorily reducible to it. Or, the explanatory power of such reductions confronts the radical alterity of the very matter to which they propose access. As I suggest in Chapter 1, these difficulties often come into focus when the cornerstone ideas that found materialist ontologies prove no less mysterious than the metaphysical categories they were meant to replace. In response to the wild indeterminacy of Lucretius' dust motes, or the inscrutable architecture of the

atom itself, for instance, the materialist theses addressed by this book often retreat from their own demands for transparency and demystification. Curiously, the writers discussed here are as interesting for their cavalier neglect of these problems in some moments as they are for their scrupulous negotiations with them in others. Tracking the link between persons and atoms thus also means tracing the various points of entry developed by American writers for extending Lucretius' vision of a necessary continuity joining the smallest particles to the elements of human experience. What emerges, I argue, is less a coherent materialist view of the subject (or of the universe that gives rise to it) than a peculiarly vexed model of poetic vocation – one in which what charters the poet's revisionary project coincides with what limits the intelligibility of every materialism.

Lucretius represents one important point of reference for what follows both because his example of an atomist poetics recurs throughout this study, and because critical appraisals of *De rerum natura* continue to exemplify the kinds of materialist alternatives about which these American writers instruct.[2] Such alternatives frame the gap that separates, for instance, two of the most prominent appropriations of Lucretius' poem discussed today: Stephen Greenblatt's *The Swerve* and Michel Serres's *The Birth of Physics*. Each of these books adapts the classical poem to an account of the relationship between materialism and modernity, but they tell very different stories about the nature of that relationship. For Greenblatt, the recovery of Lucretius proves central to a narrative about the emergence of a secular humanism; for Serres, the fluidity of the world discovered in Lucretius' poem destabilizes many of the epistemological conventions on which that humanism depends.

In *The Swerve*, one of the most widely celebrated books of 2012, Greenblatt specifies Lucretius' influence on what he calls "the course of modernity" by telling a story that casts classical atomism as "the basis for the contemporary rational understanding of the entire world."[3] In fact, *The Swerve* is really two projects: one a generally satisfying nonfiction potboiler detailing the rediscovery of Lucretius in 1417 by a papal secretary and bibliophile named Poggio Bracciolini (the Latin poem had been lost for centuries); the other a cultural historiography in which *De rerum natura* has a synecdochic function within Greenblatt's thesis that Renaissance humanism marks the genesis of modernity.[4] But *The Swerve* nevertheless integrates this bibliographic story about the recovery of Lucretian atomism from the dust of a fifteenth-century monastery into its story about the emergence of modern life and thought. The dissemination of Epicureanism via the chance discovery of Lucretius' poem thus

sponsors what Greenblatt calls a "vital connection" between the poetics of classical materialism and our present confidence in models of "a world in motion … made more beautiful by its transience, its erotic energy, and its ceaseless change."[5] In Greenblatt's final chapter, this genealogy of "the foundations on which modern life has been constructed" arrives at a series of avatars chosen for their status as representative moderns as much as for their debt to classical atomism: Montaigne, Isaac Newton, Thomas Jefferson, and Charles Darwin.[6] Greenblatt's emphasis thus falls on the degree to which Lucretius can be said to familiarize philosophical materialism – "the worldview I recognize as my own" – by reaffirming generic commitments to the liberal and scientific epistemologies said to reflect the way things are.[7]

Serres, on the other hand, locates the promise of *De rerum natura* in its chance to radically disrupt the modern scientific episteme. In the renewal of atomism advocated by *The Birth of Physics*, the emphasis falls on the indeterminacy implicit in Lucretius' assertion that material forms are merely chance vortices forming and dissolving within a river of atoms. In Epicurean mechanics, everything begins with an image of atoms moving through a void on paths that never intersect, a condition called "laminar flow." Lucretius theorizes the *clinamen* – often translated as "inclination" or "swerve" (hence Greenblatt's title) – as the minimal angle of deviation that disturbs that primordial torrent and leads to the constellations of particles that comprise material reality. In Serres's reading, the impossibility of determining this event becomes its most important feature. When Lucretius insists that the *clinamen*, like the leap of an electron, occurs at an indefinite time and place (*incerto tempore, incertisque loci*), this means not only that the atomic swerve happens at random, but that it resists measurement or location of any sort.[8] As a consequence, whatever does appear retains this fundamental indeterminacy governing both its composition and its dissolution. "A thing in its particularity," Serres avers, consists of nothing more than "a turbulence induced by an angle to the current."[9]

For Serres, appreciating the fluid mechanics that governs Lucretius' universe thus requires privileging models that describe cataracts and vortices rather than solid bodies – a calculus of local relations rather than universal laws. Instead of locating the atomism of *De rerum natura* in the foundations of modern science, Serres envisions it as a subversive underside to the modes of scientific inquiry that predominate since the era Greenblatt celebrates. Because the Lucretian emphasis on flux and indeterminacy subordinates static laws to fluid mechanics, classical atomism threatens to liberate our understanding of materiality from its constraints – not from

a regime of medieval superstition, but from the *logos* that authorizes modern scientific discourse.[10] Serres thus advocates a "scandalous" materialism from a range of vantages often captured in aphoristic assertions: "deviation wins out over homogeneity"; "[a]tomist physics is lacunary"; "the stable flees, and only the unstable can hold"; "[h]istory is chance, aleatory, and stochastic."[11] In Serres's genealogy, the official story of scientific materialism forbids access to Lucretius' universe of flows in a bellicose effort to preserve its certainties from its contingencies – "[f]rom Heraclitus to Hiroshima," he argues, "Western science has continually chosen otherwise than Lucretius."[12]

For Greenblatt, Lucretius becomes the centerpiece of a narrative about how we became modern; for Serres, Lucretius opens a path to becoming something other than modern. Each of these arguments tends to reduce historical nuances in order to tell a particular story, and each can seem surprisingly polemical for treatments of atomic physics and classical poetics. But they also demonstrate something about the stakes involved in debates about the explanatory power of our philosophical materialisms. One way to put this might be to describe it as a choice between ideas of the atom that familiarize and those that defamiliarize; another way might be to distinguish between materialist theses that reify the boundaries of the human and those that radicalize such boundaries. Greenblatt proposes reaffirming "the worldview I recognize as my own," for instance, by recovering "a scientific vision of the world . . . imbued with a poet's sense of wonder."[13] Serres proposes a view of the world that cannot be recognized as belonging to anyone, at least not in the sense that Greenblatt means, by rethinking the "poet's sense" as a means for viewing material forms "enveloped by an infinity of adherences, sliding infinitely from the virtual to the actual."[14] The promise of a stable subject-position tied to Greenblatt's historical trajectory – the sort to which a "worldview" belongs – thus seems to unravel in many of Serres's most striking passages: "I am myself deviation, and my soul declines, my global body is open, adrift. It slips, irreversibly, on the slope. Who am I? A vortex. A dispersal that comes undone."[15] One recovery of Lucretian atomism emphasizes the material subject's coherence; the other emphasizes its turbulence.

The readings that comprise this book are addressed to the fact that today's critical materialisms typically fall somewhere between these poles. Analyses of our material adherences tend to negotiate, that is, between a materiality that achieves a determinate view of the world and a materiality that dissolves the subject who does the viewing. I have more to say in Chapter 1 about the history of that negotiation and instances of its

theorization. What distinguishes the tradition in American poetics traced in subsequent chapters, however, is a brazen presupposition that the vocation of the poet involves the resolution of such difficulties. Rather than choose between a material subject whose boundaries we recognize and a materiality that explodes such boundaries, these writers champion each and advance headlong into the cataract Lucretius describes as the tumultuous foundation of whatever occurs. Tracking the development of such poetic adventures and their aftermath reveals an under-acknowledged literary history that I believe anticipates many of the questions today's most provocative theories of our materiality require we ask.

Some of the most striking instances in that history emerge from moments in which American writers borrow models of atomic physics, both classical and cutting-edge, as they attempt to rethink the composition of the human in material terms. Whitman adopts features of Lucretius' fluid mechanics, for instance, in which even perception involves contact between physical bodies. Stevens addresses his late poetry to the conceptual puzzles introduced by quantum mechanics. In each of these cases, atomizing human experience promises new possibilities for that experience: material models of intersubjectivity (Whitman); visions of universal power (Emerson); a new ground for ethical and aesthetic value (Santayana); greater confidence in the role of the creative mind in the world (Stevens). Such texts resolve the person into its smallest constitutive parts, observe the motions of those parts, and then assemble a newly powered subjectivity using only the plenitudes available to the atomist. But I also describe the ways these materialist claims encounter their own limits – or the ways they manage risks to the stability and coherence of the subjects they atomize. For Whitman and Emerson, such risks emerge as they attempt to use the visionary achievement of atomized subjectivity to transcend the limits of human scale. For Santayana and Stevens, who withdraw from such attempts, these risks become epistemological problems in which persons seem to absorb and suffer the fundamental opacity of the world in which they are grounded. For each, the explanatory power of the atom promises a ground for human experience; for each, however, fusing experience to the physical world also means developing models of subjectivity that are vulnerable to dissolution, triviality, and incoherence.

The tragic details of these figurations ultimately prove less interesting, however, than the characteristic ways these writers manage the anxieties produced by experimentation with material subjectivity. This book thus tracks a gradual attenuation of materialist claims – a process by which each of these writers withdraws from the exuberance of his early

assertions in order to account for the difficulties that follow from materializations of human experience. Charting such difficulties relates literary production to the history of science with the explicit goal of exploring the theoretical utility of the lessons learned from such an intersection. Each of the following chapters also addresses a larger question, in other words, about the value of our discursive materialisms – or about the viability of any attempt to locate the genesis of subjectivity on an immanent plane or material substrate. The readings included here are distinguished both by their tendency to work against the grain of American writers' materialist assertions and by their placement as linked moments in a story about the emergence of a theoretical problem.

Chapter 1 frames those readings by introducing a somewhat unconventional atomist paradigm – "aporetic materialism" – and describing a handful of instances in its history. One such instance occurs in an 1879 essay by William James, which insists that every controversy in our speculative tradition amounts to a contest between idealism and materialism. While James suggests this results in an endless divergence of philosophical perspectives, I argue that his prose actually points to something more like a convergence: his materialist craves idealism's commensurabilities; his idealist longs for materialism's heterogeneous particulars. Perhaps surprisingly, the untenable bind characterized by this state of affairs resembles another described in Theodor Adorno's *Negative Dialectics*, in which Marxian historical materialism becomes a closeted form of the idealism it means to prohibit. For Adorno, efforts to dispense with the onto-theological tendencies that haunt our philosophical categories by invoking the immediacy of material reality invariably reproduce the sorts of metaphysical first principles (the claim that only physical things exist, for instance) they hope to expunge. We seem to be trapped, in other words, between the demand for a stable material ground and its impossibility, and thus any honest materialism requires the ceaseless negation of its own assertions.

Of course, the trouble with calling every thoroughly materialist perspective an aporia is that one risks disabling the efficacy such perspectives entirely – as if to bring the history of materialist thinking to an ignominious and screeching halt. Rather, I find that aporetic materialism, however vexed, has a surprisingly rich history across a variety of employments, many of which illuminate the terms critics use to wrestle with materiality today. The latter half of Chapter 1 explores provocative eighteenth-century encounters with James's and Adorno's dilemma that anticipate the American writers I survey. In the model of machinal subjectivity developed by Julien Offray de la Mettrie, for instance, the claim to a materialist

explanation for every facet of human experience (consciousness, sensation, sexuality, spirituality) runs into the confounding limits that characterize any description of that claim's foundational concept – the atom. La Mettrie thus concedes the unintelligibility of the very idea he elsewhere insists makes our corporeality wholly intelligible; the human subject is discernible via its body, and yet the body itself conceals a mystical foundation. In Denis Diderot's mischievous treatment of similar materialist puzzles, the job of sorting out what links sensitive subjects and insensate objects belongs more to poets, who are free to play with disparate images, than to natural philosophers, who get stuck defending the integrity of universal laws. That this distinction between the poet and the naturalist gives way to a single vocational summons in my readings of American writers, who self-consciously invite the philosophical turbulence of Serres's material vortices, only demonstrates the point. Diderot's decision to amplify, rather than resolve, the difficulty of pinpointing what he calls a "necessary resonance" between experience and its material ground offers a helpful point of entry for my story about the vocation of the materialist poet.

Of course, scholarship addressing similar questions provides another point of entry. The idea that material subjects figure prominently in American literature is not a new one for American studies. Criticism addressed to the significance of our material constitution demonstrates an increasing interest in, first, the ways that bodies fashion selves and, more recently, the unrecognized "selves" that may reside in non-human bodies. The present study is indebted to much of this work and distinct from it in several important ways. I borrow from criticism interested in links between materiality and literary history in order to describe a poetic tradition taking its materialism to unusual extremes. In one of the classic assessments of what binds identity to embodiment in nineteenth-century American prose, for instance, Sharon Cameron's *The Corporeal Self* describes Melville's and Hawthorne's depictions of a subjectivity somehow at once more than the body and always bodily. In Cameron's readings, such models of the self require visions of a "different" corporeality that both exceeds the subject and nevertheless signals its incorporation (and identification) – a transcendental body, in other words, oddly comprised of an "almost undifferentiated materiality."[16]

In many ways, the allegorized bodies that populate American fiction in Cameron's analysis – bodies whose individuation is subordinated to an extra-personal material ground – resemble the atomized subjects envisioned by Whitman and Emerson, for instance, in the readings that follow. For Cameron, as for subsequent examinations of American literary

history that develop this turn to corporeality, the revisionary appeal of such work reflects the fact that investigations of the physical body tend to "collapse distinctions on which post-Renaissance conceptions of identity have relied."[17] Against Greenblatt's assumption that attending to our materiality familiarizes the world, in other words, such an insight proposes that attention to the body intervenes in normative understandings of modern subjectivity – the sort of intervention that Serres hopes will overturn our scientific epistemologies. While I share this interest, I also draw attention to a materialist poetics whose practitioners envision radically new possibilities for their atomized subjects. Such texts develop claims to conceptual revolutions, rather than historical revisions, of our ethical, political, and epistemological horizons – revolutions said to follow from the suspension of every distinction between mind and body, soul and substance, anima and atom. That such experiments consistently fail to arrive at any determinate form or coherent system for their liberatory materialisms only further demonstrates the peculiarly theoretical set of challenges against which an atomist poetics strives.

My readings are also indebted to but different from studies in which examining "material culture" means attending primarily to processes of consumption and exchange. In recent decades, a provocative body of scholarship from different disciplines has asked us to notice the significance that non-human objects have for our accounts of the modern subject. Such work explains the ways attachments to particular material forms are linked to conceptions of selfhood and social relationship. At its most lucid, this scholarship describes the processes according to which objects are used, circulated, and valued in order to lay bare the complex of historical mechanisms that regulate the material production of desire, identity, and community. In his introduction to an influential anthology, Arjun Appadurai recommends inverting conventional accounts of the ways things acquire meaning and value: the materialist anthropologist traces their forms, uses, and trajectories because "it is the things-in-motion that illuminate their human and social context."[18] In response to this line of inquiry, critics have turned their attention to what underpins the "thingness" of material objects – what Bill Brown calls an "object matter" understood in terms irreducible to the cultural forms (namely, modern capitalism) supposedly governing our relation to it. In *A Sense of Things*, Brown calls for attention to an "indeterminate ontology" glimpsed by literary texts that stage the commerce between subject and object in ways that blur conventional distinctions between them.[19] The objectivity that underlies subjectivity reveals itself, according to this work, as an

occasion for new modes of cultural inquiry – the life of the dust mote, to use Lucretius' example, that discloses the making of modernity.

While this book also explores a model of subjectivity constituted via its relation to objectivity, my interest differs from these accounts of "material culture" and "object-orientation" to the degree that it emphasizes an immanent relation to a material substratum imagined to underlie the particularity of *both* subject and object. Brown's call for more nuanced attention to the being(s) in objects, for instance, nevertheless retains the phenomenological frame that sets human experience against (or, at most, adjacent to) the thingness of things.[20] In the texts I discuss, on the other hand, subjects are said to emerge not only in dialectical relation to an object-world, but also as analogues to that world. The poetic accounts of atomized subjectivity on which this book focuses thus often seem to raise the stakes for any examination of our material relations. These accounts of the subject-qua-matter suggest not only that the circuitry of our cultural networks are necessarily material (that objects we possess come to possess us, that commodities are participants in a late-modern episteme, and so on) but also that viewing human experience itself as a material event renews and radicalizes its potential. At the same time, the writers discussed here anticipate a desire found among today's readers of American literary and natural history for better accounts of the lively intransigence of the material world – what Jane Bennett calls a "positive ontology of vibrant matter," or Laura Dassow Walls calls the "chimerical gestalt" of Thoreau's rivers and forests.[21] An atomist poetics proposes that such an ontology, determinate or otherwise, must be *our* ontology; the gestalt of the object must be the gestalt of the subject. Moving from the phenomenality of the object to the primordiality of the atom, in other words, here means describing a materialism that claims to reinvent the subject, however implausibly, as if from the ground up.

In Chapter 2, I position Whitman at the beginning of this reinvention story because his early poetry stages the most dramatic representations of both the exhilarations that atomized subjects enjoy and the risks they suffer. Early in *Leaves of Grass*, Whitman develops his enthusiasm for the popular science of the 1850s into a progressive atomism capable of demonstrating that human subjects and human polities are built from "a common air that bathes the globe."[22] As these poems labor to convert matter into spirit, they presume that access to what James calls the "sand-heap world" of material reality offers the poet a chance to build his sand castles from nothing more than the atoms of experience. But then in its third edition Whitman's project famously takes a darker turn that compels many